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REF: VTU/BGM/BoS/SEE-CH/2024-25/ 2108

DATE: 8 AUG 2024

CIRCULAR

Sir/ Madam,

Subject: Semester End Evaluation Method corrected for course 21CH71-Process Equipment Design & Drawing

Reference:

1. Chairperson BoS in Chemical Engineering email dated 07.08.2024
2. The Hon'ble Vice-Chancellor's approval Dated: 07.08.2024

This is a reference to the subject mentioned above. The Chairperson of the Board of Studies in Chemical Engineering has corrected a typographical error in the semester-end evaluation(SEE) method of course **21CH71: Process Equipment Design and Drawing.**

Attached to this circular is a copy of the syllabus, including the updated semester-end evaluation method.

All principals of engineering colleges offering a chemical engineering program are requested to inform all relevant parties about the updated content of the circular.

Encl: As mentioned above.

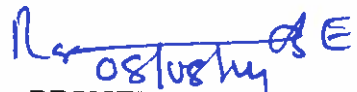

Sd/-
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To,

All the Principals of Engineering Colleges under the ambit of the University

Copy to

- The Hon'ble Vice-Chancellor through the secretary to VC for information
- The Registrar (Evaluation) for information and needful
- The Director, ITI,SMU,VTU Belagavi for information and needful also request to upload the circular on the University website
- The Special Officer QPDS section of VTU Belagavi for information and needful
- Office copy


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Process Equipment Design & Drawing			
Course Code	21CH71	CIE Marks	50
Teaching Hours/Week (L:T:P:S)	3:0:0:0	SEE Marks	50
Total Hours of Pedagogy	40	Total Marks	100
Credits	3	Exam Hours	4
Course objectives:			
<p>The students will be able to</p> <ul style="list-style-type: none"> • Understand advances and types in the design of heat and mass transfer equipment and its accessories. • Develop modifications based on design. 			
Note:			
<p>Detailed chemical engineering process design of the following equipment should be studied. Standard code books are to be used. The detailed proportionate drawings shall include sectional front view, full top/side view depending on equipment and major components.</p> <p>Class work: Students are to design the equipment. They shall also be trained to draw free hand proportionate sketches.</p> <p>Final Examination: Students have to answer any one of the two questions given in the examination. After completing the design, free hand proportionate sketches are to be drawn as required.</p>			
Teaching-Learning Process (General Instructions)			
<p>These are sample Strategies, which teacher can use to accelerate the attainment of the various course outcomes.</p> <ul style="list-style-type: none"> • An appeal is made to the teachers to use alternative effective teaching methodology to inculcate an interest in the subject and its applications to solve societal & industrial problems. • Efforts may be made to use MOOC's, videos, recorded contents, presentations to induce curiosity, better understanding, and also higher levels of learning. • Activities to promote interest may be incorporated wherever possible 			
Content			
<ol style="list-style-type: none"> 1. Shell and Tube Heat exchanger 2. Condenser – Horizontal 3. Condenser – Vertical 4. Evaporator – Single effect 5. Sieve Tray Distillation Column 6. Packed Bed Absorption Column 7. Rotary Drier 			
Teaching-Learning Process	<p>The teaching learning process along with the conventional teaching methodology may involve activities for the whole-class, or structured group work, or guided learning and individual activity.</p>		
Course outcomes (Course Skill Set)			
<p>At the end of the course the student will be able to :</p> <ol style="list-style-type: none"> 1. Design and analyse the heat transfer equipment without phase change 2. Design Mass transfer equipment with tray column 3. Design Mass transfer equipment with packed columns 4. Design Combined Heat and Mass Transfer equipment 			

Assessment Details (both CIE and SEE)

The weightage of Continuous Internal Evaluation (CIE) is 50% and for Semester End Exam (SEE) is 50%. The minimum passing mark for the CIE is 40% of the maximum marks (20 marks). A student shall be deemed to have satisfied the academic requirements and earned the credits allotted to each subject/course if the student secures not less than 35% (18 Marks out of 50)in the semester-end examination(SEE), and a minimum of 40% (40 marks out of 100) in the total of the CIE (Continuous Internal Evaluation) and SEE (Semester End Examination) taken together

Continuous Internal Evaluation:

Two Unit Tests each of **30 Marks (duration 04 hour)**

1. The first test is at the end of 40-50% of the syllabus coverage.
2. The second test is at the end of 85-90% of the syllabus coverage.
3. Two assignments each of **10 Marks**
4. First assignment at the end of 4th week of the semester
5. Second assignment at the end of 9th week of the semester

Group discussion/Seminar/quiz any one of three suitably planned to attain the COs and POs for **20 Marks (duration 01 hours)**

6. At the end of the 13th week of the semester

The sum of two tests, two assignments, and quiz/seminar/group discussion will be out of 100 marks and will be **scaled down to 50 marks**

(To have a less stressed CIE, the portion of the syllabus should not be common /repeated for any of the methods of the CIE. Each method of CIE should have a different syllabus portion of the course).

CIE methods /question paper is designed to attain the different levels of Bloom's taxonomy as per the outcome defined for the course.

Semester End Examination:

Theory SEE will be conducted by University as per the scheduled timetable, with common question papers for the subject (duration 04 hours)

1. The question paper will have two questions. Each question is set for 100 marks.
2. The students have to answer any one full question.
3. Marks scored out of 100 by the student shall be proportionally scaled down to 50 Marks

Suggested Learning Resources:

Books

1. Process Equipment Design - M. V. Joshi, 3rd edn., Macmillan & Co. India, Delhi, 1998.
2. Process Equipment Design - Vessel Design, Brownell & Young, John Wiley, 1959.
3. Process Design of Equipment - Vol 1, S. D. Dawande, 3rdedn, Central Techno Publications. 2003.

4. Chemical Engineers Handbook, Perry & Green, 8thedn, McGraw Hill, 1997.
5. Pressure Vessel Code - IS 2825, 4503, IS Code, B.I.S., New Delhi, 1969.
6. Flow of Fluids through Valves, Fittings & Pipes, Crane Amazon, 2006.

VISVESVARAYA TECHNOLOGICAL UNIVERSITY, BELAGAVI
B.E. in Chemical Engineering
Scheme of Teaching and Examinations 2021
Outcome-Based Education (OBE) and Choice Based Credit System (CBCS)
(Effective from the academic year 2021 - 22)

Swappable VII and VIII SEMESTER

VII SEMESTER

Sl. No	Course and Course Code	Course Title	Teaching Department (TD) and Question Paper Setting Board (PSB)	Teaching Hours /Week				Examination			Credits	
				Theory Lecture	Tutorial	Practical/ Drawing	Self-Study	Duration in hours	CIE Marks	SEE Marks		Total Marks
				L	T	P	S					
1	PCC 21CH71	Process Equipment Design & Drawing	CH	3	0	0	0	4	50	50	100	3
2	PCC 21CH72	Biochemical Engineering	CH	2	0	0	0	2	50	50	100	2
3	PEC 21CH73x	Professional elective Course-II	CH	3	0	0	0	3	50	50	100	3
4	PEC 21CH74x	Professional elective Course-III	CH	3	0	0	0	3	50	50	100	3
5	OFC 21CH75x	Open elective Course-II	Concerned Department	3	0	0	0	3	50	50	100	3
6	Project 21CH76	Project work		Two contact hours /week for interaction between the faculty and students.				3	100	100	200	10
Total								350	350	700	24	

VIII SEMESTER

Sl. No	Course and Course Code	Course Title	Teaching Department	Teaching Hours /Week				Examination			Credits		
				Theory Lecture	Tutorial	Practical/ Drawing	Self-Study	Duration in hours	CIE Marks	SEE Marks		Total Marks	
				L	T	P	S						
1	Seminar 21XX81	Technical Seminar		One contact hour /week for interaction between the faculty and students.				--	100	--	100	01	
2	INT 21INT82	Research Internship/ Industry Internship		Two contact hours /week for interaction between the faculty and students.				03 (Batch wise)	100	100	200	15	
3	NCMC	21NS83	National Service Scheme (NSS)	NSS	Completed during the intervening period of III semester to VIII semester.				--	50	50	100	0
		21PE83	Physical Education (PE) (Sports and Athletics)	PE									
		21YO83	Yoga	Yoga									
Total								250	150	400	16		

Professional Elective - II

21CH731	Instrumental Methods of Analysis	21CH734	Novel Separation Techniques
21CH732	Oils and Fats Technology	21CH735	Chemical Plant Utilities and Safety
21CH733	Pharmaceutical Technology		

Professional Elective - III

21CH741	Chemical Process Integration	21CH744	Pilot Plant and Scale Up Studies
21CH742	Transport Phenomena	21CH745	Process and Industrial Safety
21CH743	Pulp and Paper Technology		

Subject Name: Process Equipment Design & Drawing
Subject Code:21CH71
Semester :VII
Scheme :2021

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